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July 5, 2012

Via Hand Delivery

Julius Knapp
Chief, Office of Engineering & Technology
Federal Communications Commission
Room C250
The Portals
445 12th Street, SW
Washington DC 20554

Re: Request for Waiver

Dear Mr. Knapp:

Uniden America Corporation, by counsel and pursuant to 1.925 of the Federal Communications Commission's ("Commission") rules and regulations, hereby requests a waiver of section 95.419 of the Commission's rules to build, certify, import and sell citizens band radios that will operate with a wireless microphone and that will also wirelessly cue the radio for Push-to-Talk ("PTT"). The following is respectfully submitted by Uniden to demonstrate that good cause exists for the requested authority and that this waiver should therefore be granted.[1]

I. BACKGROUND

As reported in 2010 by the Commission in *Review of the Commission's Part 95 Personal Radio Services Rules*[2] the Citizens Band (CB) Radio Service is a two-way, short distance voice communication service for use in personal and business activities of the general public.[3] In the

[1] Generally, the Commission's rules may be waived if good cause is shown. 47 C.F.R. § 1.3. The Commission may exercise its discretion to waive a rule where the particular facts make strict compliance inconsistent with the public interest. *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990) (*Northeast Cellular*). In addition, the Commission may take into account considerations of hardship, equity, or more effective implementation of overall policy on an individual basis. *WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969); *Northeast Cellular*, 897 F.2d at 1166.

[2] Review of the Commission's Part 95 Personal Radio Services Rules, WT Docket No. 10-119, FCC 10-106 25 FCC Rcd 7651 (2010) (hereinafter referred to as "*Part 95 Review*")

[3] 47 C.F.R. § 95.401. "[T]he purpose of the CB Radio Service is to provide for short-distance personal and business radiocommunications and ... this purpose has not changed since the service's initial authorization." *See* Amendment of Section 95.413 of Commission's Rules Prohibiting Communications or Attempts to Communicate with Citizens Band Radio Services Stations than More than 250 Kilometers Away, *Amendment of Section 95.413*15 FCC Rcd 18828 (2000), affr, *Order,* 16 FCC Rcd 14825, 18830-31 ¶ 6 (WTB 2001) (*CB Order).*

1970s, Citizens Band radio became extremely popular in the highly mobile American culture that lacked a way to communicate while on the road or away from the wireline telephone system. This was an age that preceded the ubiquitous use of cellular, PCS and other personal communications devices.

While many of the uses for CB radio at that time, and many that gave rise to some abuses discussed below, have been supplanted by those more recent technologies, CB radio continues to demonstrate is utility and importance to Americans on the move who have a need to communicate. It is a service that remains relevant and important when there is a need for local, short-distance instant communication capability. For example, despite many other more recent forms of one-to-one wireless communication, truck drivers in America continue to use CB radio to stay in touch with other drivers in their immediate vicinity. Using CB radio, they can easily get traffic updates on the highway, ask for directions, get weather updates, and even chat with others on the radio. CB radio is the subject of a popular online magazine, visited by the user and hobbyist community.[4] Moreover, CB radio is completely free of user charges and it is safe in the sense that there are no telephone numbers involved; resulting in complete anonymity if that is desired by the communicator.[5]

However, prior to the widespread availability of affordable mobile telephone service, some abuses did develop in the CB radio service. In 1983 the Commission adopted rules to prevent certain of those abuses, particularly those who were attempting to use CB to communicate over vast distances with illegal power and, when unattended, by remote control. Accordingly, Section 95.419 was adopted to prohibit the operation of a CB station transmitter by remote control (i.e., operation from any place other than the location of the CB transmitter).[6] Further, as the Commission noted in *Part 95 Review*, Section 95.607 prohibits the addition of any "accessory" or device not specified in the application for certification and authorized by the FCC in granting the certification.[7] While not intended to apply to them, there is no exception to Section 95.419 for wireless hands-free microphones. Nevertheless, a request from Omnitronics for waiver of 95.419 for an earphone/microphone device that would permit hands-free operation of a CB station transmitter was denied despite the lack of any comments filed against the device or the waiver.[8]
Furthermore, despite a request by Omnitronics to amend the rules to permit CB Hands-Free microphones,[9] and *the Commission's preliminary conclusion that the rule sections at issue were not specifically intended to prohibit the use of wireless hands-free microphones*,[10] no action has been taken on the Omnitronics rulemaking request.

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[4] See: http://cbradiomagazine.com/ A source for "reviews, videos, modifications and more!"
[5] How You Can Make Use of a CB Radio Today, CB Radio Today, June 11, 2011 http://www.cbradiotoday.com/cb-radio-today/
[6] *See* 47 C.F.R. § 95.419(a), (c)
[7] 47 C.F.R. § 95.607(a).
[8] *Part 95 Review*, at ¶49
[9] Id. At ¶¶49 - 51
[10] Id. At ¶53

II. UNIDEN REQUEST FOR WAIVER FOR THE USE OF A WIRELESS MICROPHONE WITH CB TRANSCEIVERS

In the absence of FCC action, but in recognition of the sentiments expressed by the Commission's preliminary conclusion in *Part 95 Review*, Uniden has been exploring design options for a proprietary CB Wireless Microphone to be used with certain of our CB radio products that would be fully compliant with the FCC suggestions in *Part 95 Review*[11]. Starting in early 2012, Uniden began shipping CB radios that utilize a 6-pin microphone jack (earlier models include a 4-pin microphone jack). The additional two pins are available to provide power and audio capable of signaling to a wireless microphone transceiver connected to the microphone jack, in the event such an accessory is allowed by FCC action.

Additionally, Uniden has started designing a two-piece wireless microphone accessory. It would like to complete that design and begin manufacturing this wireless microphone accessory. Therefore, Uniden hereby requests a waiver of the current rule 95.419 which prohibits remote control of a CB transceiver, even though it is not clear from the language of the rule that use of wireless microphones with CB transceivers would be considered to be remote control. The Commission itself proposed the rule change as a mere "clarification" and not as a change in policy. Yet, such a waiver, or statement that a waiver is not required to proceed to certification, is in order before the required capital can be committed to the manufacturing process and to avoid the risk of a possible rule violation.

A. UNIDEN'S PROPOSED WIRELESS MICROPHONE ACCESSORY TECHNICAL AND OPERATIONAL SPECIFICATIONS.

1. Design Considerations

In designing its CB Wireless Microphone, Uniden considered multiple factors that, combined, serve to protect the interests of the individual user and the public at large. These considerations included the following factors:

- False Key Avoidance – preventing PTT from being inadvertently or intentionally activated by other in-band devices not authorized by the user.
- Limited range – prevent operation of the CB from outside the immediate vicinity of the CB transceiver.
- Dead Key Avoidance – prevent transmission for longer than a prescribed certain duration due to mechanical fault, operator error, or other factors.
- Out of Range Notification – alerts the user when the wireless microphone is out of range of the CB transceiver's wireless microphone adapter.
- Ergonomic Aesthetics – provide a familiar and comfortable operating configuration so that operation of the wireless microphone does not create a distraction to the driver.

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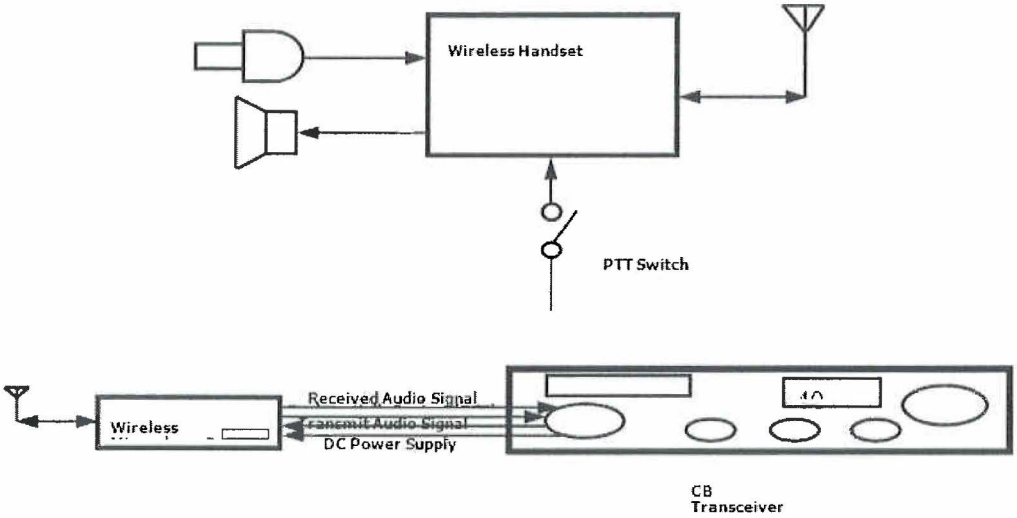
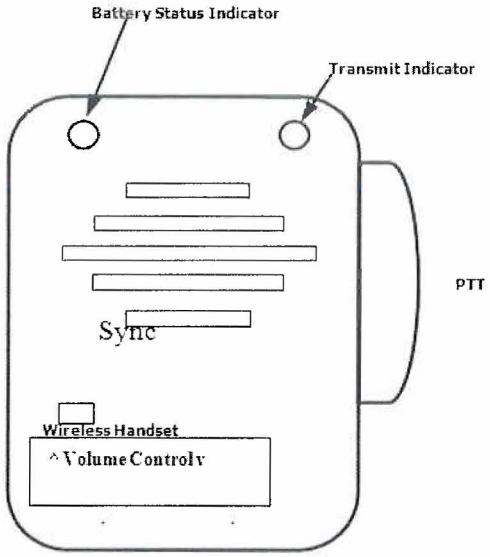
[11] *Part 95 Review* at ¶53

- Low-power warning – alert the user when the wireless microphone's internal battery becomes low so that operation is not interrupted without warning.
- Ubiquitous charging – allow the user to charge the wireless microphone's battery using multiple convenient methods

While Uniden has considered hands-free solutions, at this time it has concluded that a completely hands-free option (i.e. PTT controlled purely by a VOX circuit) is not practical in a situation where the environment includes both background noise such as in-cab entertainment (satellite or terrestrial radio receivers) and the potential for other reasons for the driver to be talking (such as with other persons in the vehicle). So, for these practical considerations, a PTT actuation button would be necessary. As such a button is not part of the Bluetooth standard, we have opted to use a DECT-based solution that has advantages of lower cost and easier interface.

2. System Block Diagram





3. Theory of Operation

As shown in the block diagram, the Wireless Microphone Accessory comprises two separate pieces:

1) Wireless Microphone Base Adapter (Adapter)
2) Wireless Handset (Handset)

a. Physical Connection

As proposed, the adapter connects to the CB transceiver using the CB transceiver's microphone port. The port includes the following 6 signal pins:

1) +12V
2) PTT
3) TX Audio
4) RX Audio
5) Power (CB Chassis) Ground
6) Audio Ground

There is no physical connection between the Handset and the adapter or between the Handset and the CB transceiver. The Handset is charged by way of a DC input provided by USB (Universal Serial Bus) power.

4. Security Pairing

To prevent false keying, the Handset must be paired to the Adapter prior to use. To initiate pairing, the user must press SYNC on both the Handset and the Adapter. A data link is then established between the Handset and the Adapter and the following steps occur:

1) The Handset generates a random security code from a universe of 130,000 possible codes and sends a pairing request to the Adapter including this code.
2) The Adapter generates a random security code from a universe of 130,000 possible codes and transmits an acknowledgement to the Handset, including the Adapter security code.
3) The Handset and Adapter exit the pairing mode.

From this point, the Handset can only communicate with the Adapter, and vice versa.

B. NORMAL COMMUNICATION AND PTT CONTROL

Once paired, the user operates the Handset much like a conventional wired microphone. When the user wants to communicate using the CB transceiver, the user presses PTT on the Handset and begins speaking. When the user has completed transmission, the PTT is released. Any received communication is heard from the speaker in the Handset, as well as from the speaker on the CB transceiver (if volume level for both devices is turned up).

Operational control occurs as follows:
Link Establishment

a. Upon power up, Handset sends a link establishment request via data channel.

b. Adapter verifies valid security code and acknowledges the link request. In the event the security code is invalid, no acknowledgment is sent.

PTT Operation

a. When PTT is pressed on the Handset, it continuously sends a PTT status update over the data channel every 1.6 seconds. It also begins sending Transmit Audio data packets to the Adapter.

b. The Adapter activates PTT on the CB transceiver and begins decoding the received Transmit Audio data packets and passes the analog audio to the CB for transmission. Each time the PTT status update is received, the Adapter extends the PTT activation duration by 3.2 seconds. In this way, the Adapter must miss two consecutive PTT status messages to end PTT.

c. When PTT is released on the Handset, it sends a PTT off status notification over the data channel and immediately stops sending Transmit Audio data packets.

d. When the Adapter receives a PTT off status message, it immediately ends PTT activation of the CB transceiver.

Out of Range Operation during PTT

If the Handset loses data sync with the Adapter, it immediately sends a PTT off data message on the data channel and stops sending audio from the Handset to the Adapter. If the Adapter fails to receive the PTT off data message, it will stop PTT activation automatically within 3.2 seconds of the loss of signal from the Handset.

C. TECHNICAL STANDARDS AND PROTOCOL

The proposed Uniden Wireless Microphone utilizes the DECT standard for communication between the Handset and the Adapter. The DECT standard is widely used for cordless telephone products and other similar devices and the operation of a wireless microphone is allowed for under the DECT protocols. The following outline provides the design specifications for this implementation using the DECT protocol:

1. System frequency band: 1.9GHz UPCS cordless phone band
2. Type of modulation: FSK
3. Maximum Occupied Bandwidth: 1.5 MHz
4. Maximum RF Power: ~0.6V/m at 3 meters
5. Communication range: 100 meter maximum open field (actual operating environment will limit range)
6. Automatic PTT cut-off on loss of signal: 3.2 seconds

III. WAIVER REQUEST AND JUSTIFICATION

Section 1.925[12] of the Commission's rules provides that the Commission may waive its rules if the petitioner has shown:

> The underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and that a grant of the requested waiver would be in the public interest;

Uniden believes it has met this burden for the requested waiver. Cord tangle is a well known problem in truck cabs. Dangling microphone cords often get tangled in a way that that can distract drivers. This can result in a driving hazard while the driver attempts to untangle the cord. Cords dangling from overhead can also obstruct the driver's vision. Uniden often fields user questions inquiring if something can be done about this. This waiver will respond to that concern and serve the higher public interest in promoting road safety. Additionally, it will allow the driver to communicate over the CB radio while inspecting the truck, conducting a safety check, or while reporting a specific problem. The power, at or below the Part 15 limit for unlicensed personal communications devices, is limited such that it will only be useful within the immediate surrounding area of the vehicle. This responds to historic concern over illegal long range use. Moreover, the concerns that led to the limitations of §95.419 have been largely outmoded by the advent of ubiquitous, affordable mobile cellular and PCS service, generally available along all U.S. Interstate highways. Simply put, truckers and other travelers spending long periods away from home or in need of remote order response now have far better and more effective methods of communicating for those purposes than remotely cued, illegally powered CB radio systems. Even if they still had such a need, the wireless microphone system proposed by Uniden would be useless for fulfilling that purpose.

Furthermore, the issues surrounding the authorization of wireless CB microphones, as proposed by Uniden, have already been thoroughly vetted with the public and within the Commission. The relevant questions were posed to the public in connection with the Omnitronics waiver request and the *Part 95 Review*. The FCC Electronic Comment Filing System (ECFS) discloses that over 250 comments were filed in the *Part 95 Review* proceeding and nearly a dozen in the Omnitronics waiver request docket, none of which opposed wireless CB microphones. The Commission has already proposed to allow what is requested here, and Uniden has been careful to comply with the restrictions suggested at paragraph 53 of the *Part 95 Review*; that its wireless microphone will operate under Part 15, its range is limited to the immediate vicinity of the CB transmitter and its operation will not change any of the operating parameters of the CB transmitter or affect the CB transmission.

Uniden also requests that this waiver be granted without further public comment periods. OET has granted a waiver without seeking public comment before and this request shares many of the same considerations. In *Respironics, Inc.* 22 FCC Rcd 21861 (2007), a waiver was granted for

[12] 47 C.F.R. § 1.925(b)(3)

the continued manufacture of medical monitoring devices that were not in compliance with the "restricted band" provisions in Section 15.209 of the Commission's Rules. While the Uniden waiver request is for a much different type of product, many of the same considerations that justified a waiver in that case are similar here. Those factors were:

1. Transmission only active only during brief periods,
2. Negligible risk of interference with other devices using the frequency,
3. Detectible only within the immediate vicinity of the receiver over a short range wireless link, and
4. Denial would not serve the underlying purpose of the rules since grant would not lead to the harm the rules were designed to prevent.

In essence, all four of the *Respironics* factors are present here:

1. Transmission activity period
    a. As a DECT unit, the Uniden wireless microphone will actively transmit whenever powered up. However, if the Handset loses data sync, or if the Adapter fails to receive the PTT, transmission is automatically stopped within 3.2 seconds.
2. Risk of Interference
    a. The 1.920-1.930 band is now exclusively DECT and is now almost entirely used for fixed-point telephony (i.e. home and office telephones and intercoms). There is negligible risk of interference with other similar devices as most CB radios are used on the open road where DECT fixed-point telephones are not useful.
    b. Under the DECT standard, devices cannot interfere with any other device unless the device density, i.e. the number of devices simultaneously operating within range, is very high. That situation is highly unlikely to occur in this application.
3. Short Range
    a. The power limit for a DECT device operating in the 1920-1930 MHz band with a bandwidth of 1.5 MHz and using an antenna with less than 3 dB of gain is 20.8 dBm. Uniden's engineers expect to set the final power level for the Wireless CB Microphone to a level that is 3 to 6 dB lower than that limit. Unlike the use of the DECT band for telephony, where there is a desire to maximize the possible range in order to achieve a marketing advantage, in the case of a CB Microphone, a higher premium is placed on battery life and minimizing the potential for interference, conditions which are both improved by using a lower power level. Since the power level will be roughly ½ to ¼ that allowed by DECT telephones, the potential for the Wireless CB Microphone to interfere with these devices is negligible.
    b. Further, to minimize the chance of interference between DECT devices, the DECT protocol fully complies with the requirement of Section 15.323 of the Rules, which "listen before transmit" to prevent operation on an occupied signal path.

4. Underlying Purpose Of The Rules
   a. The rules were designed to prevent long range, remote controlled absentee operation of high-powered CB radios. The operation of a 1.9 GHz, low power DECT wireless link could not serve that function, so denial of this waiver would not serve the underlying purpose of the rule or lead to the harm that the rule was designed to protect against.

Respironics used a criterion that also supports Uniden's request that this waiver be granted without a wasteful re-solicitation for public comment.

> Given the similarity of *Respironics'* instant request to that which we previously granted, and given the paucity of comment that we received on the initial request, we have not sought comment on Respironics' request for an extended waiver. See 47 CFR 1.925(c)(1) (Commission may, in its discretion, seek comment on waiver applications). *Respironics* At footnote 7

Although never before granted, Uniden is here requesting a waiver that was thoroughly vetted in two prior public comment periods; the *Omnitronics* and *Part 95 Review* proceedings. Not only was there a paucity of comment on this issue, but upon the Commission's own observation, there has been no opposition to wireless CB microphones. Accordingly, in recognition of the Commission's statement at paragraph 53 that the rules were not specifically intended to prohibit the use of CB wireless microphones, and considering that there may never have even been and may not now be such a proscription, there is no public interest that would be served by placing this request out for further repetitive comment.

Uniden believes its waiver request is ripe for grant on the existing record and requests that it be granted as soon as possible.

Sincerely,

Gregg P. Skall
Counsel to Uniden America Corporation

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